

REMARKS

Reconsideration and allowance of the present patent application based on the foregoing Amendment and following remarks are respectfully requested.

In the Office Action dated June 12, 2008, the Examiner rejected claims 9 and 10, under 35 U.S.C. §102(b), as allegedly being anticipated by Mamontov '961 (SU 923961); rejected claims 13, 14, 17 and 18, under 35 U.S.C. §103(a), as allegedly being unpatentable over Shiota '181 (U.S. Patent Publication No. 2004/0104181 A1) in view of Ding '283 (U.S. Patent No. 6,720,283); and rejected claims 11 and 12, under 35 U.S.C. §103(a), as allegedly being unpatentable over Mamontov '961 as applied in claims 9 and 10.

By this Amendment, claims 9, 11-14, and 17-18 have been amended to provide a clearer presentation of the claimed subject matter. Claim 21 has been newly added. Ample support for the amendments can be found throughout the as-filed application. Applicant submits that no new matter has been introduced. As such, claims 9-14, 17-18, and 21 are presented for examination, of which claims 9 and 13 are independent.

I. Rejections Under §102(b)

As noted above, independent claim 9 is directed to a method of removing organic nitrogen from an aqueous liquid and positively recites, *inter alia*, ***oxidizing the aqueous liquid***.

With that said, Applicant submits that Mamontov '961 fails to disclose at least the above-identified feature of claim 9. Mamontov '961 discloses a method for the removal of aliphatic amines and/or their salts from waste stream. The method may include (a) adjusting the pH of the waste to pH 2 to 5 with carbonic acid or nitric acid; (b) heating the waste stream with alkali or alkali earth nitrite in the presence of halide ions; and (c) removing the evolved nitrogen. However, Mamontov '961 clearly fails to disclose that the waste stream is oxidized. As such, Mamontov '961 fails to disclose ***oxidizing the aqueous liquid***, as required by claim 9.

For at least these reasons, Applicant submits that Mamontov '961 fails to disclose each and every feature of claim 9. As such, claim 9 is clearly patentable. And, because claim 10 depends from claim 9, claim 10 is patentable at least by virtue of its dependency from claim 9

as well as for its additional recitations. Accordingly, the immediate withdrawal of the rejections of claims 9 and 10 is respectfully requested.

II. Rejections Under §103(a)

As noted above, independent claim 13 is directed to a method of removing organic or inorganic contaminants from an aqueous liquid and positively recites, *inter alia*, adding a ***peroxide solution in the presence of an activated carbon catalyst*** at a controlled pH to oxidize and remove organic and inorganic contaminants, wherein the catalyst is used as a particulate in a fixed bed reactor or moving bed reactor caused by the motion of fluid or gases, or by mechanical means through which ***the aqueous liquid to be treated comes in continuous contact with the catalyst in the presence of the peroxide solution.***

With this said, Applicant submits that Shiota '181 and Ding '283, either alone or in combination with one another, fail to disclose, teach or suggest the features of claim 13.

Shiota '181 discloses a method for oxidizing and/or decomposing organic and/or inorganic oxidizable substances in waste water. Shiota '181, however, fails to disclose the use of peroxide solution (in other words, liquid peroxide) in the presence of an activated carbon catalyst to oxidize and remove organic and inorganic contaminants. Shiota '181 discloses the use of an oxygen containing gas (see, Abstract of Shiota '181) and not a peroxide solution, as claimed.

Moreover, Shiota '181 discloses that the use of activated carbon as a catalytic component in conventional wet oxidation processes causes various problems. Specifically, Shiota '181 notes that it has been practically impossible to use activated carbon as a catalytic component for conventional wet oxidation because of problems with combustion of the activated carbon and problems with its short effective life as a catalyst. (see, paragraph 9 of Shiota '181).

On the other hand, per various embodiments of Applicant's invention, a peroxide solution is used in the presence of an activated carbon catalyst to oxidize and remove organic and inorganic contaminants. Thus, the use of liquid peroxide in combination with an activated carbon catalyst is greatly beneficial as it allows the use of this activated carbon catalyst for removing the organic and inorganic contaminants (which, per the teachings of Shiota '181, would be practically impossible to do).

Thus, in light of these teachings, Applicant submits that the claimed combination of features would not be predictable to one of ordinary skill in the art, at the time the invention was made.

Furthermore, the remaining reference, Ding '283, is incapable of curing the deficiencies of Shiota '181 identified above. Ding '283 merely discloses the use of a catalyst for conversion of synthetic gas to diesel fuel. Thus, for at least these reasons, Applicant submits that none of the asserted references, whether taken alone or in reasonable combination, teach or suggest the claimed combination of elements recited by amended claim 13. As such, claim 13 is clearly patentable. And, because claims 14 and 17-18 depend from claim 13, either directly or indirectly, claims 14 and 17-18 are patentable at least by virtue of dependency as well as for their additional recitations. Accordingly, the immediate withdrawal of the rejections of claims 13-14 and 17-18 is respectfully requested.

Claim 17, for example, further recites that the method is performed at atmospheric pressure. Applicant notes that this provides an advantage, for example, that a relatively expensive pressurized vessel is not needed for Applicant's claimed process to function effectively.

Also, claim 18, for example, recites that the method is performed at a controlled temperature, the controlled temperature selected from a range of 0°C to less than 50°C. This provides another advantage, for example, that Applicant's claimed process can be effectively carried out at near ambient temperatures. In contrast, Shiota '181's process requires elevated temperatures.

As such, for these additional reasons, the rejections of claims 17 and 18 is improper and withdrawal of these rejections is respectfully requested.

With respect to the rejections of claims 11 and 12, Applicant submits that these claims depend from claim 9, either directly or indirectly. Thus, claims 11 and 12 are patentable at least by virtue of dependency as well as for their additional recitations. Accordingly, the immediate withdrawal of the rejections of claims 11 and 12 is respectfully requested.

Claim 21 is newly added to define additional subject matter that is novel and non-obvious. Claim 21 is patentable over the art of record at least by virtue of its dependency from claim 13 and for the additional features recited therein.

III. Conclusion.

All matters having been addressed and in view of the foregoing, Applicant respectfully requests the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of all pending claims.

Applicant's representative remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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Addendum

Attachment 1

METHODS FOR THE REMOVAL OF ORGANIC NITROGEN, ORGANIC AND
INORGANIC CONTAMINANTS FROM AN AQUEOUS LIQUID